

**REMARKS**

Claims 1-28 are pending in this application. In view of the following remarks, reconsideration and allowance are respectfully requested.

**I. Rejections under 35 U.S.C. §103(a)**

**A. Joachimi, Aylward, and Andrew**

The Office Action rejects claims 1-23, 25 and 26 under 35 U.S.C. §103(a) over U.S. Patent Application Publication No. 2003/0125429 to Joachimi et al. (hereinafter "Joachimi") in view of U.S. Patent No. 5,998,119 to Aylward et al. (hereinafter "Alyward") in further view of U.S. Patent No. 3,459,575 to Andrew et al. (hereinafter "Andrew"). Applicants respectfully traverse the rejection.

The April 14, 2008 Office Action and the June 27, 2008 Advisory Action assert that it would have been obvious to one of ordinary skill in the art to combine the applied references to produce a laser-transmissible resin of claims 1-23, 25 and 26. Applicants respectfully disagree.

Applicants submit that the applied references fail to provide any reason that would lead one of ordinary skill in the art to the laser-transmissible resin exhibiting a whitish hue of independent claims 1, 7, and 15, comprising titanium oxide particles, wherein surfaces of the titanium oxide particles are treated with a surface treatment agent that is "selected from the group consisting of aluminum, alumina, aluminum-silicon, aluminum laurate, and aluminum stearate."

First, Joachimi is directed to dark laser transmitting compositions, not white. See Joachimi, paragraphs [0001] and [0022], reproduced below for convenience.

[0001] The present invention relates to dark-coloured thermoplastic moulding compositions and moulded parts produced therefrom...

[0022] The object is therefore to find dark, laser-transmitting moulding compositions for the production of moulded parts of high surface quality, which can be bonded effectively to

laser-absorbing moulded parts by the laser transmission process, wherein in a preferred embodiment the two moulded parts exhibit to the human eye a very similar optical appearance in terms of colour and surface quality.

Thus, the proposed modification of the composition of Joachimi (see Office Action, pages 3-9) improperly renders Joachimi unsatisfactory for its intended purpose.

Moreover, because Joachimi is directed to finding dark, laser-transmitting moulding compositions, one of ordinary skill in the art looking to produce a laser-transmissible resin exhibiting a higher degree of whiteness would not have any reasonable expectation of success of producing such a resin exhibiting a higher degree of whiteness from the pigments disclosed therein.

Thus, submitted herewith is a declaration under 37 C.F.R. §1.132 with additional experimental data to that provided in the specification to help show the importance of using a surface treatment agent that is "selected from the group consisting of aluminum, alumina, aluminum-silicon, aluminum laurate, and aluminum stearate," as recited by claims 1, 7, and 15, to produce a work-piece with sufficient transmissivity and the higher degree of whiteness desired for laser-welding.

As described in Experiment I of the attached 37 C.F.R. §1.132 Declaration, it is the treatment of titanium oxide with a surface treatment agent that is "selected from the group consisting of aluminum, alumina, aluminum-silicon, aluminum laurate, and aluminum stearate," as recited by claims 1, 7, and 15, that produces a work-piece with sufficient transmissivity and the higher degree of whiteness desired for laser-welding.

Besides the fact that Joachimi is directed to providing dark, laser-transmitting moulding compositions, the applied references at least fail to provide any reason to treat the titanium oxide particle recited in claims 1, 7, and 15 with a surface treatment agent that is "selected from the group consisting of aluminum, alumina, aluminum-silicon, aluminum laurate, and aluminum stearate." In fact, Joachimi discloses non-treated titanium oxide and

over 30 other inorganic pigments and/or dyes that are suitable as colorants. See Joachimi, paragraphs [0075] and [0076], reproduced in part below for convenience.

[0075] Both organic and inorganic pigments and/or dyes are suitable as colorants....

[0076] Examples of inorganic pigments are antimony trioxide, antimony pentoxide, basic lead carbonate, basic lead sulfate or lead silicate, lithopones, titanium dioxide (anatase, rutile), zinc oxide, zinc sulfide, metal oxides such as Berlin blue, lead chromate, lead sulfochromates, chrome antimony titanate, chromium oxides, iron oxides, cobalt blue, cobalt chromium blue, cobalt nickel grey, manganese blue, manganese violet, molybdate orange, molybdate red, nickel antimony titanate, ultramarine blue, as well as metal sulfides such as antimony trisulfide, cadmium sulfide, cadmium sulfoselenides, zirconium silicates, zirconium vanadium blue, zirconium praseodymium yellow.

Andrew is directed toward the surface treatment of titanium oxide. Andrew discloses that the titanium oxide particles can be treated with "hydrates or oxides of titanium, silicon or aluminum, or mixtures of such hydrates or oxides." See Andrew, col. 5, lines 21-29.

Aylward relates to imaging elements that differ from the laser-transmissible resin composition for laser welding of claims 1, 7, and 15. Aylward does not provide any reason to use the surface treatment agents of claims 1, 7, 15. Furthermore, the surface treatment agents of Aylward are considerably more reactive than aluminum, alumina, aluminum-silicon, aluminum laurate, and aluminum stearate. See Aylward, col. 6, lines 42-53.

The surface of the  $\text{TiO}_2$  can be treated with an inorganic compounds such as aluminum hydroxide, alumina with a fluoride compound or fluoride ions, silica with a fluoride compound or fluoride ion, silicon hydroxide, silicon dioxide, boron oxide, boria-modified silica (as described in U.S. Pat. No. 4,781,761), phosphates, zinc oxide,  $\text{ZrO}_2$ , etc. and with organic treatments such as polyhydric alcohol, polyhydric amine, metal soap, alkyl titanate, polysiloxanes, silanes, etc. The organic and inorganic  $\text{TiO}_2$  treatments can be used alone or in any combination. The amount of the surface treating agents is preferably in the range of 0.2 to 2.0% for the inorganic treatment and 0.1 to 1% for the organic treatment, relative to the weight of the weight of the titanium dioxide. At these levels of treatment the  $\text{TiO}_2$  disperses well in the polymer

and does not interfere with the manufacture of the imaging support.

Thus, in view of the large number of treatment agent possibilities disclosed in the applied references, one of ordinary skill in the art in search of a whitish hue laser-transmissible resin composition would be left with no guidance to lead them to the surface treatment agent of claims 1, 7, and 15 "that is selected from the group consisting of aluminum, alumina, aluminum-silicon, aluminum laurate, and aluminum stearate."

Therefore, because none of the applied references provides any reason to use titanium oxide particles in a whitish hue laser-transmissible resin composition wherein "the surface of the titanium oxide particle is treated by a surface treatment agent that is selected from the group consisting of aluminum, alumina, aluminum-silicon, aluminum laurate, and aluminum stearate," as recited in claims 1, 7 and 15, it would not have been obvious to a person having ordinary skill in the art. Therefore, Joachimi, Aylward, and Andrew considered either separately or in combination, would not have rendered obvious the subject matter of claims 1, 7, and 15.

For at least the reasons discussed above, claims 1, 7, and 15, would not have been rendered obvious by Joachimi and Aylward. Claims 2-6, 8-14, 16-23, 25, and 26 variously depend from claims 1, 7, and 15 and, thus, also would not have been rendered obvious by Joachimi and Aylward. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**B. Joachimi, Aylward, Andrew, and Savitski**

The Office Action rejects claims 24, 27, and 28 under 35 U.S.C. §103(a) over Joachimi in view of Aylward in further view of Andrew and in further view of U.S. Patent No. 6,596,122 to Savitski et al. (hereinafter "Savitski"). Applicants respectfully traverse the rejection.

For at least the reasons discussed above, Joachimi, Aylward, and Andrew considered either separately or in combination, would not have rendered obvious the subject matter of claim 15. Savitski does not mention surface treating  $\text{TiO}_2$  and, thus, despite its asserted teachings, Savitski does not cure the deficiencies of Joachimi, Aylward, and Andrew with respect to claim 15. Therefore, Joachimi, Aylward, Andrew, and Savitski, considered either separately or in combination, would not have rendered obvious claim 15.

Claim 15 would not have been rendered obvious by Joachimi, Aylward, Andrew, and Savitski. Claims 24, 27, and 28 variously depend from claim 15 and, thus, also would not have been rendered obvious by Joachimi, Aylward, Andrew, and Savitski. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

## **II. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



William P. Berridge  
Registration No. 30,024

Benjamin S. Prebyl  
Registration No. 60,256

WPB:BSP

Attachments:

Petition for Extension of Time  
Request for Continued Examination  
Declaration Under 37 C.F.R. §1.132

Date: August 14, 2008

**OLIFF & BERRIDGE, PLC**  
**P.O. Box 320850**  
**Alexandria, Virginia 22320-4850**  
**Telephone: (703) 836-6400**

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